```
============================================================
Sequence Listing was accepted.
If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).
Reviewer: markspencer
Timestamp: [year=2008; month=6; day=12; hr=15; min=57; sec=14; ms=205; ]
============================================================
```

Validated By CRFValidator v 1.0.3

Application No: 10506925 Version No: 3.0

Input Set:

Output Set:

Started: 2008-05-19 14:11:08.608
Finished: 2008-05-19 14:11:13.865
Elapsed: 0 hr(s) 0 min(s) 5 sec(s) 257 ms
Total Warnings: 17
Total Errors: 0
No. of SeqIDs Defined: 17
Actual SeqID Count: 17

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)

SEQUENCE LISTING

<110> Neurogenex Co., Ltd.

<120> ENHANCED INSERTED YELLOW FLUORESCENCE PROTEIN AND ITS

<130> 100528.0007US1

<140> 10506925
<141> 2004-09-07

<150> KR10-2002-0012409
<151> 2002-03-08

<150> KR10-2002-0015217
<151> 2002-03-21

<150> KR10-2002-0015219
<151> 2002-03-21

<160> 17

<170> PatentIn version 3.4

<210> 1
<211> 245
<212> PRT
<213> Artificial Sequence

<220>
<223> y-citrine of fluorescence protein

<400> 1

```
Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1               5                   10                  15


Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
            20                  25                  30


Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
        35                  40                  45


Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
    50                  55                  60


Phe Gly Tyr Gly Leu Met Cys Phe Ala Arg Tyr Pro Asp His Met Lys
65                  70                  75                  80


Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
                85                  90                  95
```

```
Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
            100                 105                 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
        115                 120                 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
    130                 135                 140

Asn Tyr Gly Gly Ser Gly Ala Ser Asn Ser His Asn Val Tyr Ile Met
145                 150                 155                 160

Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
                165                 170                 175

Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
            180                 185                 190

Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu
        195                 200                 205

Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His
    210                 215                 220

Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu Gly Met
225                 230                 235                 240

Asp Glu Leu Tyr Lys
                245
```

<210> 2
<211> 245
<212> PRT
<213> Artificial Sequence

<220>
<223> Peridot of fluorescence protein

<400> 2

```
Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1               5                   10                  15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
```

```
            20                  25                  30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
        35                  40                  45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
    50                  55                  60

Phe Gly Tyr Gly Leu Met Cys Phe Ala Arg Tyr Pro Asp His Met Lys
65                  70                  75                  80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
                85                  90                  95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
            100                 105                 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
        115                 120                 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
    130                 135                 140

Asn Tyr Gly Gly Ser Gly Ala Ser Asn Ser His Asn Val Tyr Ile Met
145                 150                 155                 160

Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
                165                 170                 175

Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
            180                 185                 190

Thr Pro Ile Gly Asp Gly Leu Val Leu Leu Pro Asp Asn His Tyr Leu
        195                 200                 205

Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His
    210                 215                 220

Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Ile Gly Met
225                 230                 235                 240

Asp Glu Leu Tyr Lys
                245
```

<210> 3
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHi/5AB-F primer

<400> 3
ggggggatcc gaggctggtg aggacgttgt ctgctgctcg atgtc 45

<210> 4
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Nhe1/5AB-R primer

<400> 4
gggggctagc acctgtccat gtgtaggaca tcgagcagca gacaa 45

<210> 5
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI/CaM F primer

<400> 5
gggggatcca tgcatgacca actgacagaa 30

<210> 6
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> NheI/CaM R primer

<400> 6
ggggctagcc tttgctgtca tcatttgtac 30

<210> 7
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 7
ggggaagctt gggatggagc tcaacagcca caac 34

<210> 8
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI,Nhe1/Yins-R primer

<400> 8
gttgctagca ccggatccac cgtagttgta ctccagctt 39

<210> 9
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI,Nhe1/Yins-F primer

<400> 9
tacggtggat ccggtgctag caacagccac aacgtctat 39

<210> 10
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> NotI/EYFP(Y145GGT)-R primer

<400> 10
gggggcggcc gcctaggtac caccgttgta ctc 33

<210> 11
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 11
ggggaagctt gggatggagc tcaacagcca caac 34

<210> 12
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> NotI/EYFP(Y145GGT)-R primer

<400> 12
gggggcggcc gcctaggtac caccgttgta ctc 33

<210> 13
<211> 1182
<212> DNA
<213> Artificial Sequence

<220>
<223> Bio-Cart for Calcium

<400> 13
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacta ccttcggcta cggcctgatg tgcttcgccc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacgg tggatccatg catgaccaac tgacagaaga gcagatcgca 480

gaatttaaag aggctttctc cctatttgac aaggacgggg atgggacaat aacaaccaag 540

gagctgggga cggtgatgcg gtctctgggg cagaacccca cagaagcaga gctgcaggac 600

atgatcaatg aagtagatgc cgacggtaat ggcacaatcg acttccctga gttcctgaca 660

atgatggcaa gaaaaatgaa agacacagac agtgaagaag aaattagaga agcgttccgt 720

gtgtttgata aggatggcaa tggctacatc agtgcagcag agcttcgcca cgtgatgaca 780

aaccttggag agaagttaac agatgaagag gttgatgaaa tgatcaggga agcagacatc 840

gatggggatg gtcaggtaaa ctacgaagag tttgtacaaa tgatgacagc aaaggctagc 900

aacagccaca acgtctatat catggccgac aagcagaaga acggcatcaa ggtgaacttc 960

aagatccgcc acaacatcga ggacggcagc gtgcagctcg ccgaccacta ccagcagaac 1020

acccccatcg gcgacggcct cgtgctgctg cccgacaacc actacctgag ctaccagtcc 1080

gccctgagca aagaccccaa cgagaagcgc gatcacatgg tcctgctgga gttcgtgacc 1140

gccgccggga tcactatcgg catggacgag ctgtacaagt aa 1182

<210> 14
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI/DEVD F primer

<400> 14
ggggggatccg ccatcaagaa tgaaggaaag agaaaaggcg acgaggtg 48

<210> 15
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> NheI/DEVD R primer

<400> 15
ggggctagcg gccacttcat ctgttccatc cacctcgtcg ccttttctc 49

<210> 16
<211> 795
<212> DNA
<213> Artificial Sequence

<220>
<223> DEVDins of Bio-sensor

<400> 16
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacta ccttcggcta cggcctgatg tgcttcgccc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacgg tggatccgcc atcaagaatg aaggaaagag aaaaggcgac 480

gaggtggatg gaacagatga agtggccgct agcaacagcc acaacgtcta tatcatggcc 540

gacaagcaga agaacggcat caaggtgaac ttcaagatcc gccacaacat cgaggacggc 600

agcgtgcagc tcgccgacca ctaccagcag aacaccccca tcggcgacgg cctcgtgctg 660

ctgcccgaca accactacct gagctaccag tccgccctga gcaaagaccc caacgagaag 720

cgcgatcaca tggtcctgct ggagttcgtg accgccgccg ggatcactct cggcatggac 780

gagctgtaca agtaa 795

<210> 17
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Synthetic sequence

<400> 17

Asp Glu Val Asp
1